03.01-8/22/2000-02616

NCDENR

NORTH CAROLINA DEPARTMENT OF
ENVIRONMENT AND NATURAL RESOURCES

DIVISION OF WASTE MANAGEMENT

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August 22, 2000

Commander, Atlantic Division
Naval Facilities Engineering Command
1510 Gilbert Street (Building N-26)
Norfolk, Virginia 23511-2699

Attention: Mr. Channing Blackwell
Navy Technical Representative

Commanding General
Marine Corps Base
PSC Box 20004
Camp Lejeune, NC 28542-0004

Attention: AC/S, EMD/IRD

RE: NC Superfund Comments
Draft Natural Attenuation Evaluation Report
Operable Unit No. 9 (Site 73)
Marine Corps Base, Camp Lejeune

Dear Mr. Blackwell:

This document was received and reviewed by the Superfund Section. The investigation and report show that BTEX and chlorinated solvents are being naturally attenuated at Site 73. We agree with the recommendation for additional site characterization in the Castle Hayne Aquifer. The characterization should be designed to look for hot spots. If a hot spot can be identified, it is possible that active remediation can shorten the time needed for clean up.

Oxidized surface waters appear to be degrading vinyl chloride, a daughter product of the natural attenuation process. Long-term monitoring should be designed to closely scrutinize the vinyl chloride and ensure that levels do not pose a risk to human health or the environment.

Attached are specific comments. We appreciate the opportunity to review this document. If you have any questions or comments, please contact me at (919) 733-2801, extension 278.

Sincerely,

David J. Lown, LG, PE
Geological Engineer
Superfund Section

Attachment

cc: Rick Raines, MCB Camp Lejeune
Gena Townsend, USEPA

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NC Comments
Draft Natural Attenuation Evaluation Report
Operable Unit No. 9 (Site 73)
Amphibious Vehicle Maintenance Facility
February 29, 2000

1. Page 3-10, Second Paragraph. The cm/s units are missing.

2. Page 3-14, The third paragraph discusses areas where the confining unit is absent. A map showing where the confining unit is known to be absent would be useful.

3. Page 4-5, Section 4.2.2.3 Free Product. The text should indicate the type of free product encountered.

4. Page 4-11, Last Paragraph. We concur that additional information is needed on the extent of contamination in the Castle Hayne Aquifer.

5. Figures 4-6 and 4-7. The interpretation, shown here, of the connection of the plumes between aquifers is interesting; however, an alternate interpretation is two separate plumes with separate source areas in each aquifer. Is there enough data to validate one of these interpretations?

6. Page 5-29. Last Paragraph. The text suggests that, based on Biochlor modeling, VC will reach a maximum concentration of 0.013 mg/L at Courthouse Bay in 70 years. Increasing concentrations of VC are an important concern at this site; however, this interpretation is probably beyond the effectiveness of the model. The Biochlor model assumes that concentrations of TCE in the source area remain constant throughout the time interval modeled. This is unlikely. It is doubtful that concentrations in the source area seen today are the same as 25 years ago and data from the source area suggests that the levels are not likely to be the same 70 years from now (e.g. Figure 5-2 shows a decrease in TCE concentrations). The Biochlor modeling is important to demonstrating that natural attenuation is working in a predictable manner, however, interpretations should not be extended beyond the range of the available data.